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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,146	07/08/2003	Thomas Kuckelkorn	2678	8229

7590 07/07/2005

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EXAMINER	
PRICE, CARL D	

ART UNIT	PAPER NUMBER
3749	

DATE MAILED: 07/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/615,146	KUCKELKORN ET AL.	
	Examiner	Art Unit	
	CARL D. PRICE	3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *39-65* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *39-45,48-58 and 61-65* is/are rejected.

7)☒ Claim(s) *46,47,59 and 60* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 February 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/20/2005 has been entered.

Response to Arguments

Applicant's arguments filed **06/20/2005** have been fully considered but they are not persuasive.

Applicant's statement that the specification at page 8, lines 8-14, provides "explicit definitions for the terms 'outer end' and 'inner end' of the bellows" is noted.

Applicant's specification at page 8, lines 8-14 states the following:

> "According to a first embodiment the inner end of the folding bellows is connected by a connecting element with the metal pipe. The outer end of the 10 folding bellows is connected by the glass-metal transitional element with the tubular sleeve. **The inner end is the end, which points into the circular space, while the outer end either is outside of the circular space or points toward the outside of the circular space.** The connecting element is preferably sealed in a gas-tight manner with the metal pipe. In this embodiment the glass-metal transitional element has an inward directed collar, to which the outer end of the folding bellows is attached."

According to applicant's own definition of the inner end points **"into"** the circular or annular space between the glass sleeve and inner metal tube. And, the outer end however **"either"** is "outside of the circular space" **or** points "toward" the outside of the circular space. While an understanding of the term "inner end" of the bellows may necessarily require (i.e. – because it points "into" the circular space) that portion of the bellows to be within a circular or annular space defined between the glass sleeve and inner metal tube, the "outer end" of the bellows is not limited by definition to only be located "outside" of the space. Applicant's definition of this bellows portion to merely point "toward", or in the direction of, the outside of the circular space and not necessarily extending "into" the outside. In this regard the Examiner would disagree with any argument by applicant (see page 21, second full paragraph and page 22, first paragraph of applicant's response) that recitation "outer end" necessarily distinguishes the claimed invention from JP55-14455 in that it should, by applicant's definition, limit the claimed invention only to an arrangement where the bellows "extends into", thereby implying that the "outer end" is located "outside" (i.e. – beyond a terminal end of the glass sleeve) of the annular space. Specific limitations in the claims clearly and unambiguously locating the "outer end" of the bellows outside of the annular space such that the outer end extends form that outside location to the inner end of the bellows located inside the annular space would be necessary to support any such argument made by applicant.

The examiner is not persuaded by applicant's argument that **JP55-14455**, or **US004231353 (KANATANI et al)** fail to show the connection device as "a glass-transitional element in the sense of the present invention because there is no metal or other element that is actually inserted and fuse into the end of the glass sleeve tube" (see for example page 20, last paragraph of applicant's response). Since the claims lack any such detailed recitation of the otherwise broadly recited "glass-transitional element", applicant's comments in this regard are not persuasive as they are not commensurate with the scope of the claimed invention.

The bellows (9) of JP55-14455, for example, being located within meets the broadly stated recitation that the "folding bellows (11) extends into". The bellows 9 being located inwardly of the distal end of the glass sleeve and inwardly of end of the glass-transitional

element (8, 10), the bellows would inherently protect the glass-transitional portion (8, 10) from radiation, at least to some degree.

In response to applicant's arguments against the references individually (i.e. - **US004133298 (Hayama)**), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Drawings

The drawings filed on 06-20-2005 (New Figure 4) are not correctly labeled as **"New Sheet"** pursuant to 37 CFR 1.121(d). Accordingly, replacement drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to this Office action. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

Drawing changes must be made by presenting replacement sheets which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments section, or remarks, section of the amendment paper. **Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either** "Replacement Sheet" or **"New Sheet" pursuant to 37 CFR 1.121(d).** A replacement sheet must include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and within the top margin.

Annotated Drawing Sheets

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheet(s) must be clearly labeled as "Annotated Sheet" **and must be presented in the amendment or remarks section that explains the change(s) to the drawings.**

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings MUST be filed within the THREE MONTH shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 39-42, 50, 65 : Rejected under 35 U.S.C. 102(b)

Claims **39-42, 50 and 65** are rejected under 35 U.S.C. 102(b) as being anticipated by **JP 55-14455** (of record).

JP 55-14455 39 shows and discloses:

- absorber pipe comprising:
  - a central metal pipe (2);
  - a glass sleeve tube (1) surrounding the central metal pipe (2) so that an annular space is formed between the central metal pipe and the glass sleeve tube (1);
- a glass-metal transitional element (8) is located on a free end of the glass sleeve tube; and
- an expansion compensating device connects the central metal pipe and the glass-metal transitional element (8) with each other so as to be slidable relative to each other in a longitudinal direction and to guarantee a vacuum-tight seal between the free end of the glass sleeve tube and the central metal pipe;
- wherein the expansion compensating device comprises:
  - a folding bellows (9); and
  - a connecting element (4, 5), said folding bellows (11) is arranged under (i.e. – adjacent to) the glass-metal transitional element (8),
  - the folding bellows (9) extends into the annular space and the folding bellows has an outside end and an interior end;

- interior end being arranged within the annular space and connected to one end (at "4") of connecting element (4,5);
- wherein another end (at "5") of the connecting element (5) is connected to the central metal pipe (2); and
- wherein said folding bellows (9) and the connecting element (4,5) extend sufficiently into the annular space, between the glass sleeve tube (1) and the central metal pipe (3), so that said glass-metal transitional element (8) is protected, from radiation which would otherwise reach the glass-metal transitional element (8) after entering the glass sleeve tube (1) (In this regard, it is noted that the entirely of bellows (9) and the portion of the connecting element (4,5) located inwardly of the end of the glass tube (1) and at a position interior of the glass tube (1). It is noted that any solar radiation entering the glass tube in the direction of the glass-metal transition element (8) would fall on the folded bellows (9) as well as the portion of the connecting element (4,5) located inwardly of the end of the glass tube (1) Therefore, these elements extend sufficiently into the annular space to protect the glass-metal transitional element (8) from radiation which would otherwise reach the glass-metal transitional element after entering the glass sleeve tube.);
- the connecting element (4, 5) extends from the interior end of the folding bellows (9) through a first circular space (at 4) formed between the folding bellows and the central metal pipe (2);
- the connecting element defines a circular disk (4) connected to a cylindrical pipe-shaped section (not referenced) and a conical (at "5") shaped section.

Claims 39- 42, 44, 45, 49, 50, 65: Rejected under 35 U.S.C. 102(b)

Claims **39- 42, 44, 45, 49, 50** and **65** are rejected under 35 U.S.C. 102(b) as being anticipated by **US004231353 (KANATANI et al)** (of record).

In regard to claims **39-42, 49, 50 and 65, US004231353 (KANATANI et al)** shows and discloses (figures 3-4):

- absorber pipe comprising:
  - a central metal pipe (10);
  - a glass sleeve tube (9) surrounding the central metal pipe (10) so that an annular space is formed between the central metal pipe and the glass sleeve tube (9);
- a glass-metal transitional elements (14) located on the two free ends of the glass sleeve tube; and
- an expansion compensating device connects the central metal pipe and the glass-metal transitional element (14) with each other so as to be slidable relative to each other in a longitudinal direction and to guarantee a vacuum-tight seal between the free end of the glass sleeve tube and the central metal pipe;
- wherein the expansion compensating device comprises:
  - a folding bellows (15); and
  - a connecting element (12, 17), the folding bellows (15) is arranged under (i.e. – adjacent to) the glass-metal transitional element (14),
  - the folding bellows (15) extends into the annular space and the folding bellows has an outside end (at 15; figure 3) and an interior end (at 13; figure 5);
  - interior end being arranged within the annular space and connected to one end (12) of connecting element (12, 17);
  - wherein another end (at 17) of the connecting element (12, 17) is connected to the central metal pipe (10); and
  - wherein said folding bellows (15) and the connecting element (12, 17) extend sufficiently into the annular space, between the glass sleeve

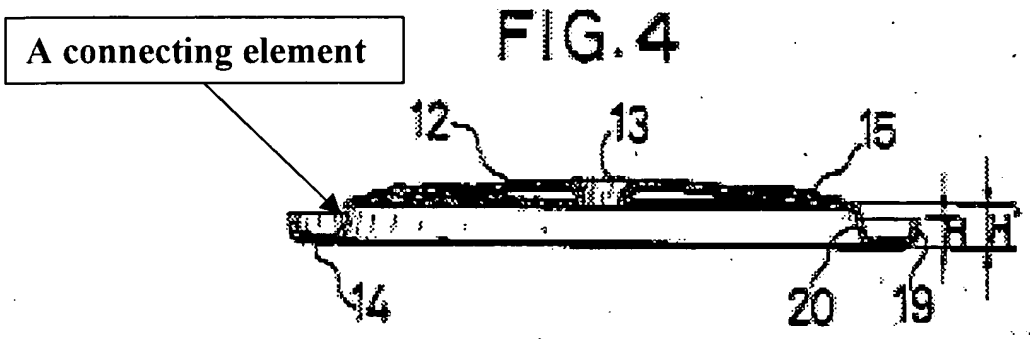
tube (9) and the central metal pipe (10), so that the glass-metal transitional element (14) is protected, from radiation which would otherwise reach the glass-metal transitional element after entering the glass sleeve tube (In this regard, it is noted that the entirely of bellows (15) and the connecting element (12, 17) are located inwardly of the end of the glass tube and at a position interior of the glass tube. It is noted that any solar radiation entering the glass tube in the direction of the glass-metal transition element would fall on the folded bellows as well as the connecting element. Therefore, these elements extend sufficiently into the annular space to protect the glass-metal transitional element from radiation which would otherwise reach the glass-metal transitional element after entering the glass sleeve tube.);

- the connecting element (12, 17) extends from the interior end of the folding bellows (15) through a first circular space (at 12) formed between the folding bellows and the central metal pipe (10);
- the connecting element defines a circular disk (12) connected to a cylindrical pipe-shaped section (not referenced).

In regard to claims **44 and 45**, **US004231353 (KANATANI et al)** shows (Figure 4) and discloses:

- the interior end (not referenced) of the folding bellows (15) is connected with the glass sleeve tube (9) by a connecting element (20; see annotated figure 4 herein below) and by the glass-metal transitional element (19).

Figure 4 of **US004231353 (KANATANI et al)** shows:



Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 43, 48, 51-58, 61-64: Rejected under 35 U.S.C. 103(a)

Claims **43, 48, 51-58 and 61-64** are rejected under 35 U.S.C. 103(a) as being unpatentable over **JP 55-14455** (of record) or **US004231353 (KANATANI et al)** (of record) in view of **US004133298 (Hayama)** (of record).

JP 55-14455 and US004231353 (KANATANI et al) disclose the invention substantially as set forth in the claimed invention with possible exception to:

- a longitudinally extending linear parabolic reflectors having a focal line with absorber pipe;
- interior surfaces of the collecting tube being coated with a mirror/reflective material to prevent heat from being released to the outside, which otherwise would be released.

US004133298 (HAYAMA), from the same solar energy collecting apparatus field of endeavor as **JP57-95544,** teaches:

- a longitudinally extending linear parabolic reflector having a focal line and at least one absorber pipe;
- a bellows being located within the annular space (15; see figure 12), or alternatively extending exterior of the annular space (see figure 15), and including connecting collar elements (not referenced; figure 13) attached to the metal tube end of the bellows or collar elements (14; figures 12,15) attached to the glass tube end of the bellows; and
- interior surfaces of the collecting tube being coated with a mirror/reflective material (17) to prevent heat from being released to the outside, which otherwise would be release.

At column 5, line 37- column 6, line 15, **US004133298 (HAYAMA)** discloses:

> Further, the **expandable member 15** and the cap 100 may be formed from flexible material, of course, **and they are not limited to the abovementioned bellows shape** but may be of any construction that can absorb the difference between the amounts of thermal expansion and contraction of the outer cylinder 11 and the heat collecting pipe 12. The **inside of the outer cylinder 11 is made vacuous in order to prevent heat release of outside due to the convection of gas e.g. air, intrusion of moisture and the inner circumferential surface being dewed.** For these reasons, by providing ... and by operating the getters 16, a metal reflecting film 17 is applied on the inner surface of both

> of the end portions to be covered with the supporting member 2 of the outer cylinder 11. **This metal reflecting film 17 serves for preventing heat release from the portions, at the end of the outer cylinder 11, of the heat collecting pipe 12.** That is, since the heat collecting fin 13 attached to the heat collecting pipe 12 is so dimensioned as to be a little shorter in view of the error of the length of the heat collecting element 1 caused during manufacturing, the heat collecting fin 13 cannot be attached to the portions of the heat collecting pipe 12 corresponding to the end portions of the outer cylinder. **By providing the metal reflecting film 17 on the inner surface of such portions of the outer cylinder 11, heat radiated from the heat collecting pipe 12 is reflected by the reflecting film and not released to the outside, which otherwise would be released.** For the provision of the reflecting films, other means than the getters may be used which can positively provide the same. The heat collecting fin ..., so that the fin 13 is apt to contact the outer cylinder 11 to break the same, and the belowmentioned solar radiant energy from the reflecting plate 3 cannot be effectively received. Therefore, according to the present invention, the heat collecting fin 13 as a whole is adapted to be held in substantially flat condition by providing a waved or jagged thermal deformation absorbing part 13a at each end of the heat collecting fin 13.

In regard to claims **43, 48, 51-58 and 61-64**, Official Notice is taken that it is well known to associate longitudinally extending linear parabolic reflectors having a focal line with absorber pipes for the purpose of providing a suitable and desired focus pattern on the collector. Furthermore, Official Notice is taken that it is well known to evacuate, make vacuous, or fill with an inert gas (i.e. – noble gas) the interior space of a collector glass tube to minimize heat loss through convection. Thus, in view of that which is well known and for the known purpose, it would have been obvious to a person having ordinary skill in the art to associate a longitudinally extending linear parabolic reflectors with absorber pipes of **JP 55-14455** and **US004231353 (KANATANI et al)**, and to fill the inner glass tube space with a "noble" gas, or evacuated. In regard to claims **43, 48, 56 and 61**, in particular, for the purpose of prevent heat from being released to the outside, which otherwise would be release, it would have been obvious to a person having ordinary skill in the art to provide inner surfaces, (i.e. – the connecting and transitional elements) of the glass tube ends **JP 55-14455** and **US004231353 (KANATANI et al)** with a mirror/reflective surface, in view of the teaching of **US004133298 (HAYAMA).**

Conclusion

See the attached PTO FORM 892 for prior art made of record and not relied upon and which are considered pertinent to applicant's disclosure.

Allowable Subject Matter

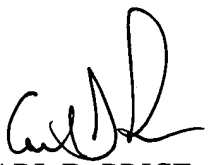
Claims 46, 47, 59 and 60 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

USPTO CUSTOMER CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CARL D. PRICE whose telephone number is (571) 272-4880. The examiner can normally be reached on Monday through Friday between 6:30am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica S. Carter can be reached on (571) 272-4475. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



CARL D. PRICE
Primary Examiner
Art Unit 3749

cp

REPLACEMENT SHEET

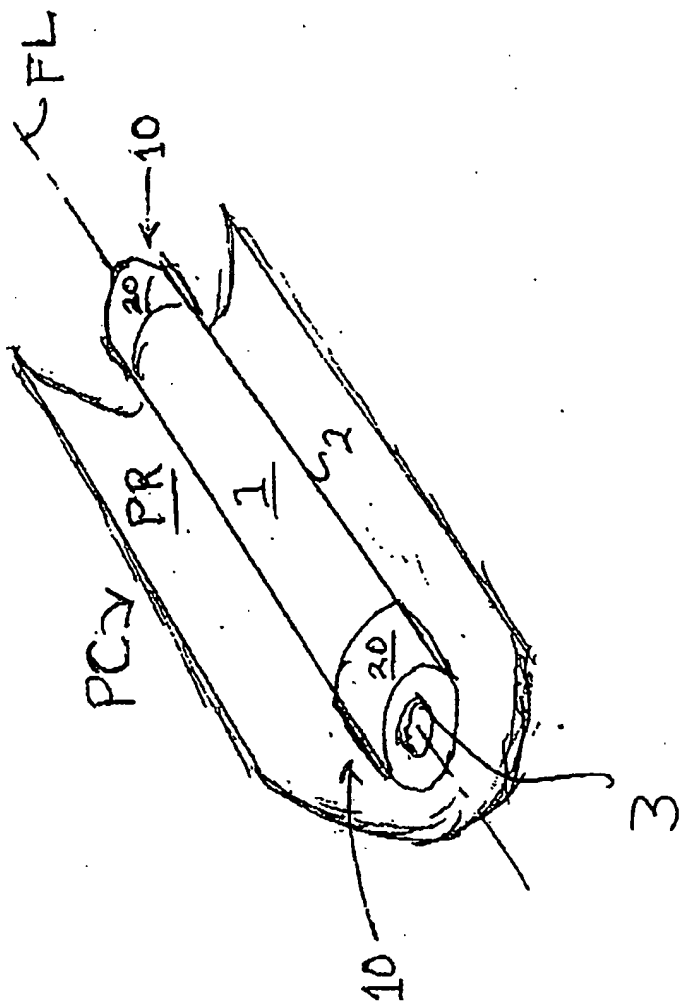


FIG. 4

NOT Approved
7/5/05
MUST BE
MARKED "NEW
Sheet"
W/ REPLACEMENT
Sheet